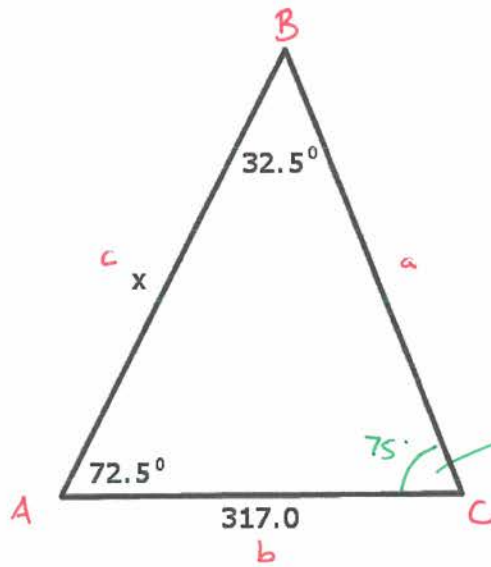


1. Find the value of the missing side length marked 'x'  
Round your answer to the nearest tenth of a unit.



STEP 2

STEP 1

$$\begin{aligned}
 &= 180 - 72.5 - 32.5 \\
 &= 180 - 105 \\
 &= 75
 \end{aligned}$$

$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

$$\frac{\cancel{a}}{\sin 72.5} = \frac{317.0}{\sin 32.5} = \frac{c}{\sin 75}$$

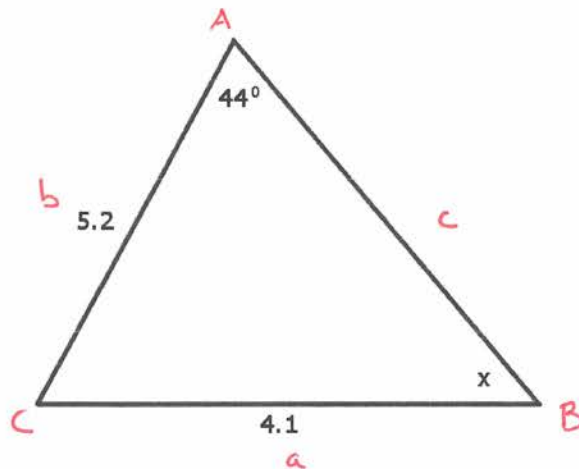
$$c = \frac{(317.0)(\sin 75)}{\sin 32.5}$$

$$c = 569.884$$

ANSWER

$$c = 569.9$$

2. Find the value of the missing angle marked 'x'  
Round your answer to the nearest tenth of a unit.



$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

$$\frac{4.1}{\sin 44} = \frac{5.2}{\sin B} = \frac{c}{\sin C}$$

$$\sin B = \frac{(5.2)(\sin 44)}{4.1}$$

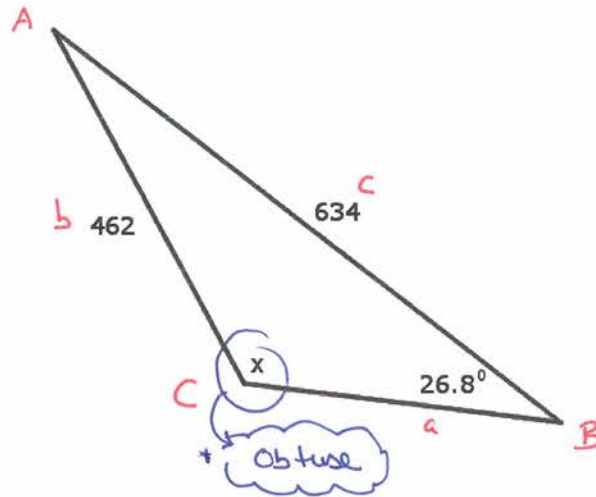
$$\sin^{-1} \sin B = \sin^{-1} 0.881030$$

$$B = 61.7668^\circ$$

ANSWER:

$$B = 61.8^\circ$$

3. Find the value of the missing obtuse angle marked 'x'  
Round your answer to the nearest tenth of a unit.



STEP 1

$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

$$\frac{634}{\sin A} = \frac{462}{\sin 26.8} = \frac{634}{\sin C}$$

$$\sin C = \frac{(634)(\sin 26.8)}{462}$$

$$\sin^{-1} \sin C = \sin^{-1} 0.618736$$

$$C = 38.2239^\circ$$

STEP 2

$$\text{Obtuse} = 180 - \text{acute}$$

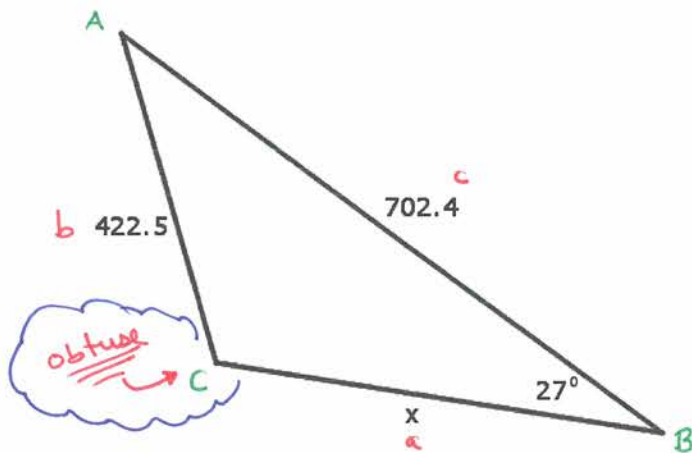
$$C = 180 - 38.2239$$

$$C = 141.776$$

$$C = 141.8^\circ$$

ANSWER:

4. Find the value of the missing side length marked 'x'  
Round your answer to the nearest tenth of a unit.



STEP 1

$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

$$\frac{a}{\sin A} = \frac{422.5}{\sin 27} = \frac{702.4}{\sin C}$$

$$\sin C = \frac{(702.4)(\sin 27)}{422.5}$$

$$\sin C = 0.75475249$$

$$C = 49.0037^\circ$$

STEP 2

$$\text{obtuse} = 180 - \text{acute}$$

$$C = 180 - 49.00374$$

$$C = 130.99625^\circ$$

STEP 3

$$\angle A = 180 - \angle B - \angle C$$

$$= 180 - 27 - 130.99625$$

$$\angle A = 22.00374^\circ$$

STEP 4

$$\frac{a}{\sin 22.00374} = \frac{422.5}{\sin 27} = \frac{702.4}{\sin 130.996}$$

$$a = \frac{(422.5)(\sin 22.00374)}{\sin 27}$$

$$a = 348.6788$$

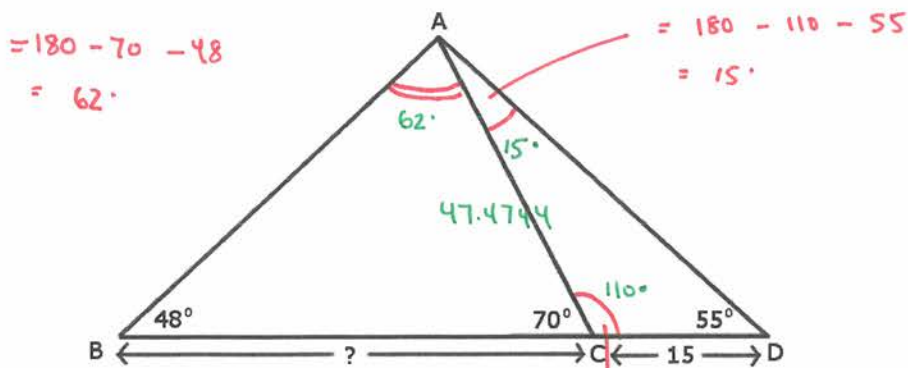
$$a = 348.7$$

ANSWER:

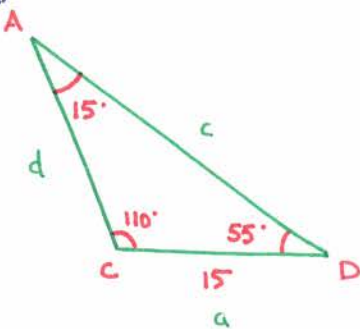
5. Find the length of line segment BC.  
Round your answer to the nearest tenth of a unit.

STEP 1

FIND MISSING ANGLES



STEP 2



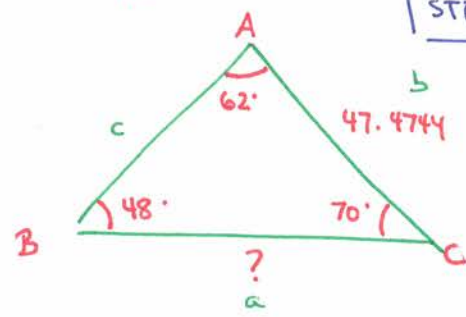
$$\frac{a}{\sin A} = \frac{c}{\sin C} = \frac{d}{\sin D}$$

$$\frac{15}{\sin 15} = \frac{d}{\sin 55}$$

$$d = \frac{(15)(\sin 55)}{\sin 15}$$

$$d = 47.4744$$

STEP 3



$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

$$\frac{a}{\sin 62} = \frac{47.4744}{\sin 48}$$

$$a = \frac{(47.4744)(\sin 62)}{\sin 48}$$

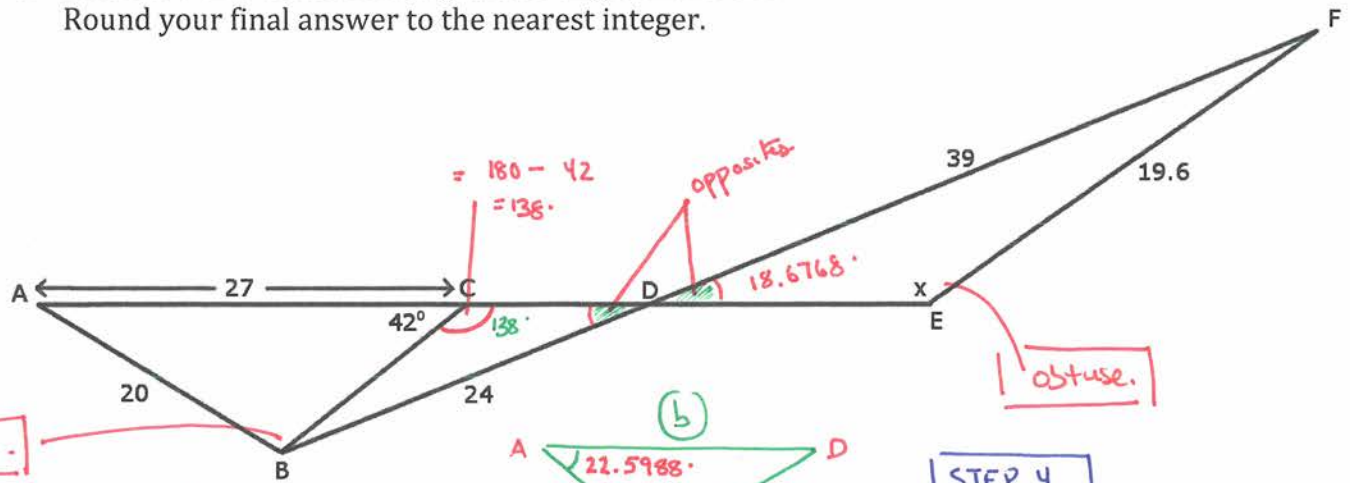
$$a = 56.405$$

$$a = 56.4$$

ANSWER.

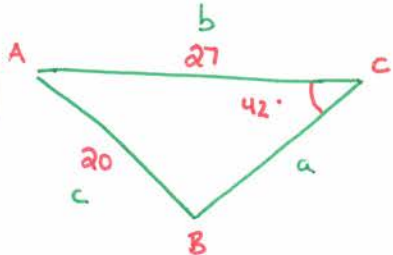


6. Find the value of the missing obtuse angle marked 'x'  
Round your final answer to the nearest integer.



Obtuse.

STEP 1



$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

$$\frac{20}{\sin A} = \frac{27}{\sin B} = \frac{20}{\sin 42}$$

$$\sin B = \frac{(27)(\sin 42)}{20}$$

$$\sin^{-1} \sin B = \sin^{-1} 0.903326318$$

STEP 2

$$B = 64.5988$$

Obtuse = 180 - acute

$$B = 180 - 64.5988$$

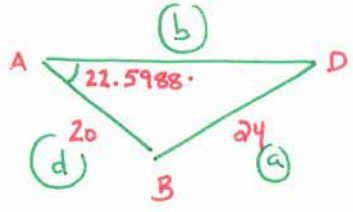
$$B = 115.4012$$

STEP 3

$$\angle A = 180 - \angle B - \angle C$$

$$= 180 - 115.4012 - 42$$

$$\angle A = 22.5988$$



STEP 4

$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{d}{\sin D}$$

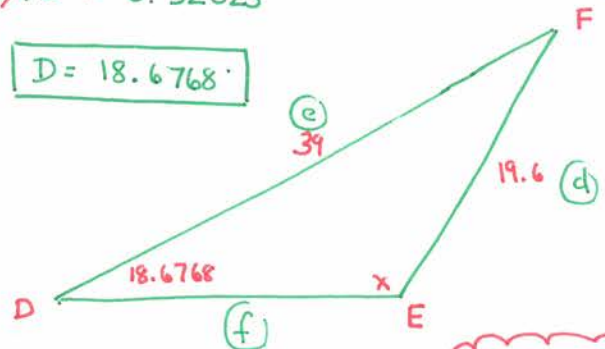
$$\frac{24}{\sin 22.5988} = \frac{20}{\sin D}$$

$$\sin D = \frac{(20)(\sin 22.5988)}{24}$$

$$\sin^{-1} \sin D = \sin^{-1} 0.32023$$

$$D = 18.6768$$

STEP 5



$$\frac{d}{\sin D} = \frac{e}{\sin E} = \frac{f}{\sin F}$$

$$\frac{19.6}{\sin 18.6768} = \frac{39}{\sin E} = \frac{f}{\sin F}$$

$$\sin E = \frac{(39)(\sin 18.6768)}{19.6}$$

$$\sin^{-1} \sin E = \sin^{-1} 0.63719$$

$$E = 39.5827$$

Obtuse = 180 - acute

$$= 180 - 39.5827$$

$$= 140.417$$

$$\angle E = 140$$

ANSWER: